

THE IMMATURE STAGES OF MATRIOPTILA JEANAE (ROSS) (TRICHOPTERA: GLOSSOSOMATIDAE)

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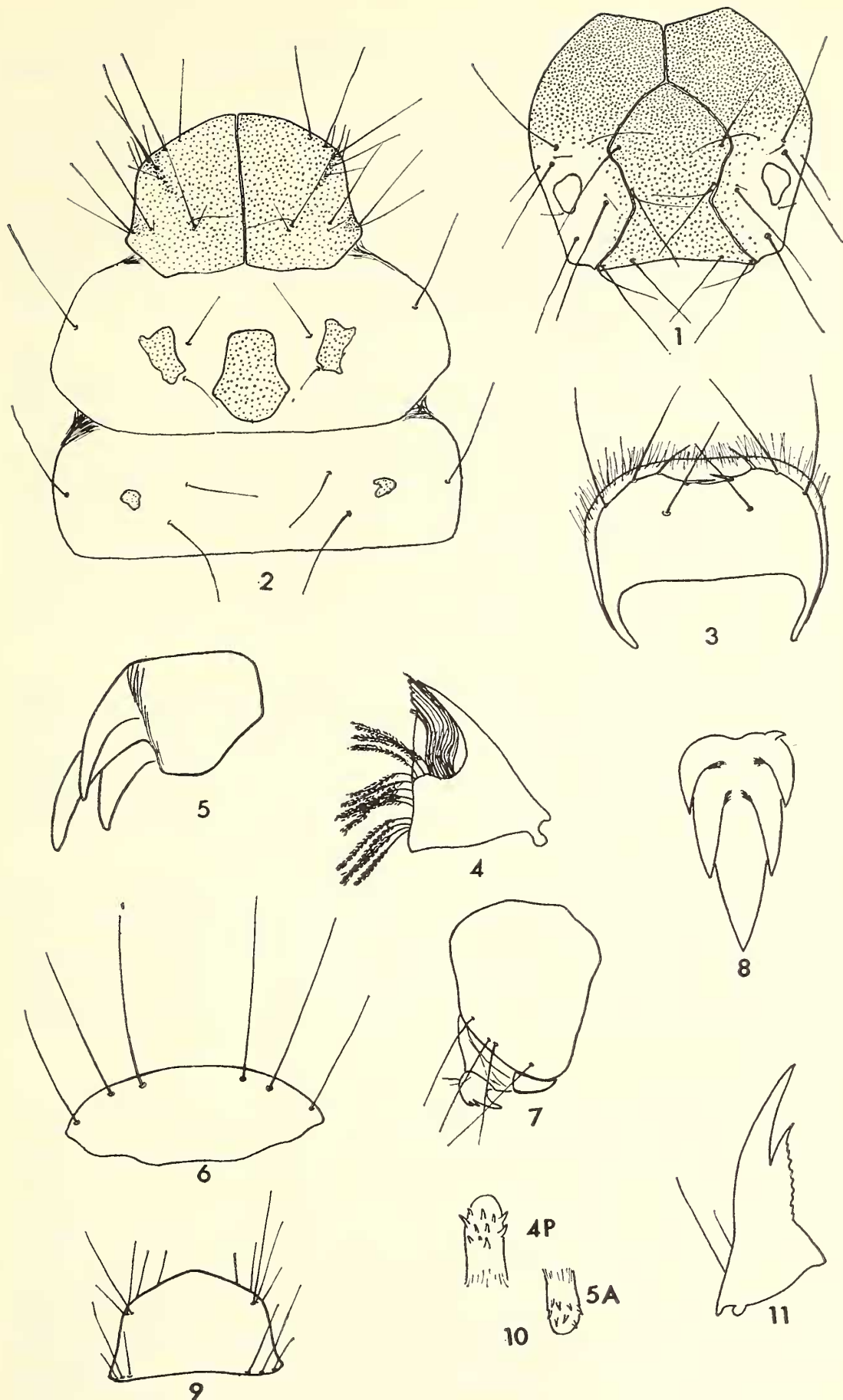
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ABSTRACT

The larvae, pupa and case of this species are described for the first time. The immature stages substantiate the separate generic status recently given the species.

Ross established in 1956 the genus *Matrioptila* for his *Protoptila jeanae*, described in 1938, which is known only from the Southern Appalachian Region of North America. The immature stages, however, have remained undescribed until the present. Many larvae and pupae were collected on June 6, 1961, in the East Fork of the Chatooga River where it flows through the Walhalla Federal Fish Hatchery near Walhalla, South Carolina. Included in the collection are several male and female pupae with fully developed genitalia that permit positive association of stages.

LARVA Length 2.5mm., width .75mm. **Head** Brown, yellow around eyes and anteriorly on venter (fig. 1). Labrum as in fig. 3; mandibles similar (fig. 4), but right one with 3 or 4 fewer feathered setae; maxillo-labium obscure. **Thorax** Tergites brown; legs pale brown to yellow; three pairs of setae present on meso- and metanota (fig. 2). Sternites typical of family: prosternum anteriorly with a pair of large wing-like sclerites, posteriorly with 2 narrow longitudinal sclerites; meso- and metasterna each with a pair of narrow transverse sclerites along posterior margins. Ventro-lateral setae at apex of all tibiae very long and strongly feathered; ventro-mesal seta of fore tibiae about $\frac{3}{4}$ as long as laterals and not strongly feathered; ventro-mesal seta on mid and hind legs about $\frac{1}{2}$ as long as laterals and spur-like. Tarsal claws with three apical teeth; usual ventral setae apparently lacking (fig. 5). **Abdomen** Dorsally segments 1 and 8 with 3 pairs of setae; segments 2 through 7 apparently lacking antro-mesal pair. Ventrally segments 1 through 9 with



EXPLANATION OF PLATE

Matrioptila jeanae (Ross). FIG. 1. Larval head, anterior. FIG. 2. Larval thorax, dorsal. FIG. 3. Larval labrum, dorsal. FIG. 4. Left larval mandible, ventral. FIG. 5. Larval tarsal claw, lateral. FIG. 6. Larval ninth tergite, dorsal. FIG. 7. Larval anal proleg, lateral. FIG. 8. Larval anal claw, ventral. FIG. 9. Pupal labrum, dorsal. FIG. 10. Pupal hook plates, segment 4 posterior, segment 5 anterior. FIG. 11. Pupal mandible, dorsal.

a pair of submesal setae; segment 1 with an additional pair of setae near midline on anterior margin, each arising from a small sclerite. Tergite of ninth segment brown, with 3 pairs of long setae (fig. 6). Anal sclerites brown, proportionately short and broad (fig. 7). Anal claw with a meso-ventral tooth, and 2 pairs of dorso-lateral accessory teeth, sometimes with a small third pair (fig. 8). Anal gills, 5.

PUPA Length 2.5mm., with .75mm. Labrum roughly quadrate with 5 setae in each anterior setal group and 3 in each posterior group (fig. 9). Mandibles identical, with an inner tooth minutely serrate on inner margin (fig. 11). Hook plates present anteriorly on segments 3 through 7, posteriorly on 4, each plate with 5-10 small hooks (fig. 10), hooks on posterior plates generally more numerous than on anterior plates. Apex of abdomen with lobes containing developing genitalia, and apparently without setae.

CASE Larval case 3mm. long by 1mm. wide. Made of small quartz grains in the usual form (see Ross 1944, fig. 136). Several well-defined openings left dorsally at both ends. Pupal case with ventral strap removed, slightly flatter, and with dorsal openings smaller; inner silken cocoon present.

SYSTEMATICS The Glossosomatidae are divided into two subfamilies, the Protoptilinae and the Glossosomatinae. The former is apparently restricted to the New World, whereas the latter is more widely distributed but is lacking in the Neotropical and Australian Regions, and greatly restricted in the Ethiopian Region.

The Protoptilinae contains two genera in the Nearctic Region, *Protoptila* with numerous species, and the monotypic *Matrioptila*. Numerous genera are present in the Neotropical Region, including *Protoptila*.

The immature stages of the Protoptilinae are poorly known. Ross (1944, fig. 96, 101) has illustrated a few characters of *P. lega* Ross, and I have larvae and pupae of *P. alexanderi* Ross. *Matrioptila* larvae, in comparison with *alexanderi* and *lega*, have numerous distinctive characters: tarsal claws trifid (apparently unique in the Trichoptera); seta 1 present on the metanotum; 3 pairs of long setae present on the ninth tergite; and the apparent lack of a third well-developed pair of accessory teeth on the anal claws. The pupae are a bit more difficult to separate. *P. lega*

has two teeth on the mandibles, but *alexanderi* has mandibles like those of *jeanae*. However, *alexanderi* has a hook plate anteriorly on segment 8, and the hook plate posteriorly on segment 4 is about twice the width of that on segment 5. It is possible either or both of these characters may be of generic value. The case of *jeanae* is constructed of many small sand grains giving the appearance of a small case of *Glossosoma*. The larvae of *Protoptila* use proportionately larger grains, often using only one large grain on each side of the case.

Ross (1956, pp. 150-151) shows that *Matrioptila* on the basis of adult morphology is undoubtedly a primitive genus. The presence of all three setae on the meso- and metanota is also primitive, but the significance of the remaining characters can not be assessed at the present.

Literature Cited

- Ross, H. H. 1938. Descriptions of Nearctic caddisflies. Bull. Ill. Nat. Hist. Surv. 21: 101-183.
- . 1944. The caddisflies, or Trichoptera, of Illinois. Ibid. 23: 1-326.
- . 1956. Evolution and classification of the mountain caddisflies. Univ. of Ill. Press. 313 pp.

NEWS ABOUT OUR MEMBERS

Doctor Jerome Rozen, Chairman of Entomology, and Doctor Frederick Rindge of that department have both visited the United States National Museum in Washington in recent weeks to examine type specimens.

Doctor Roman Vishniac, Professor of Biology Education at Yeshiva University, known as one of the world's foremost microphotographers, has presented a representative selection of his work to the Brooklyn Children's Museum for permanent exhibition in the museum's new science gallery. The exhibit, called "small world through the looking glass," includes thirteen microphotographs enlarged to 24 by 30 inches by the Color Corporation of America. The pictures reveal both the drama and the beauty of microscopic life. They include the dividing amoeba, light from a rabbit's brain and an image seen through the eye of a wasp. All of the photographs were made possible by unique lighting techniques developed by Dr. Vishniac.